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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,407	10/11/2001	Paul J. Usinowicz	HYD1624-003	1215

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EXAMINER

FORTUNA, ANA M

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/975,407

Applicant(s)

USINOWICZ, PAUL J.

Examiner

Ana M Fortuna

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the information on Table 1, specification, page 11, is not legible, the page need to be substitute.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 3-5, 6-7, 10, 11, 12, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by H. W. Todd (3,317,808)(hereinafter Todd). Todd discloses providing a fine porous device in a body of naturally occurring fluid (sea water), separating a portion of the fluid and transferring the separated portion of fluid to another location ((Fig. 1, elements 10, 9, 24, 23, column 1, lines 32-67). As to claim 2, the membrane of Todds rejects salt from the body of fluid (column 1, lines 50-68). As to claim 6, the membrane made form organic compound, e.g., cellulose, and regenerated cellulose acetate reverse osmosis membranes (column 2, lines 64-72, column 3, lines 1-20, column 4, lines 63-72), is disclosed by Todd. Regarding claim 10, the process includes transporting the separated fluid with a pump in fluid communication with the fluid, e.g. a

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lift pump (column 3, lines 20-23, Fig. 1, element 23). As to claims 11-12, the structural support, e.g. vessel 13, is also disclosed by Todd (column 3, lines 63-75, column 4, lines 1-5). Regarding claim 14, back osmotic or reverse osmosis membranes are disclosed in which water diffuses, leaving salt and other contaminants. As to claims 3-5, removing the solids, microorganism, viruses, is not disclosed in Todd's reference, however, they are inherently present in sea water, and removed by the reverse osmosis membrane (back osmotic), since the membrane is only allowed to pass fresh water (column 3, second paragraph).

4. Claims 1-7, 9, 10, 11, 12, 14, 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Watkins (5,366,635). Watkins discloses the claimed process including treating sea water by providing a fine porous device immersed in a body of fluid, separating purified fluid or water and transferring the water with a pump (94), providing a prefilter to remove solids or contaminants from the body of fluid (84), a feed pump to improve pressure of at the inlet of the filter (82), a structural support or housing (74) is also disclosed (Figure 1, column 2, lines 44-68, column 3, and column 4, lines 1-67). The removal of bacteria and organic compounds is inherent in the process of filtering water with a reverse osmosis membrane as disclosed in Watkins (element 86, fig. 1).

5. Claims 1, 3, 7, 8, 11, 12, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fok et al (5,229,005)(Fok). Fok discloses a reverse osmosis membrane device and the process of using the device in purification of sea water, the membrane can be part of the walls of a housing or vessel. 1, elements 77, 66), the membrane is formed as a composite structure including inner and outer screens to protect the

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membrane and remove solids before they enter the membrane (fig. 3, elements 68, 67, 68, 65). The structural supports are also provided, e.g. elements 88, 99 (column 4, Lines 52-68, column 5, lines 1-60).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3-5, 8, 15, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over H. W. Todd (3,171,808)(Todd) as applied to claims 1-7, 10-12, and 14 above and further in view of Carpenter (3,066,119). Todd teaches supporting the membrane in a perforated structure or vessel (column 3, lines 63-75, column 4, line 1, elements 15, 16, 13), providing the perforated material in the membrane arrangement to pass the fluid first through the perforated material (screen) before passing the membrane, is not disclosed or suggested in Todd. Carpenter teach providing reverse osmosis membrane made of cellulose acetate in an immersed water desalination device, which can be placed in open sea water for producing potable water, the membrane is provided with screens (porous members) designed to remove algae and other foreign substances (elements 23, 27 and 28, column 3, lines 27-47) before passing through the membrane(s) (elements 27 and 28, fig. 4), as claimed in claims 8, 15, 18, and 20. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use a screen supported membrane as the one disclosed

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in Carpenter in a process of purifying sea water, as the one disclosed by Todd, to support the membrane and avoid membrane breakage due to excess of pressure. As to claims 3-5, removing microorganism and other impurities from the sea is disclosed in Carpenter (column 3, lines 37-47). Pumping the water from the vessel, and vessel supporting structure, is disclosed by Carpenter (Fig. 2, elements 18, 12, 16).

8. Claims 9, 19, 13, 16, 17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd over carpenter, as applied to claims 3-5, 15, 18, 20 above, and further in view of Chancellor et al (5,944,999) (hereinafter chancellor. The references above fail to disclose providing the gravitation separation membrane device with an additional pump adapted to induce a flow of the body of fluid through said pores of the membrane, as claimed in claims 9 and 19. Chancellor teaches submerged membranes in the sea connected to a pump for extracting the permeated water, and a second pump (56) to increase the pressure of the feed liquid and help to overcome friction pressure losses in the assembly, the system is provided with reverse osmosis membranes (column 4, lines 36-48). It would have been obvious to one skilled in the art at the time the invention was made to provide a feed pump in the vicinity of the membrane, to increase pressure in the feed to the membrane and increase permeate pressure in the discharge conduit, as suggested by chancellor. The limitations of claims 13, 16 and 17 are not clearly disclosed in the prior art above, however, directing water under pressure to clean the membrane, in backwash or forward direction, for membrane cleaning purpose is common knowledge to the skilled artisan, e.g. by using the pump of Chancellor to pass a body of fluid to the membrane, at an increase velocity, cleaning of

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the membrane surface can be expected, due to the generated turbulence on the membrane surface.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Additional references cited in Form 892 include information about filtering water with reverse osmosis membranes placed at a depth within the ocean. Reference 5,281,344 teaches backwashing porous filters immersed in a volume of fluid to be filter, accumulating a portion of the filtered water and using the water from that source to backwash the filter.

10.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M Fortuna whose telephone number is (703) 308-3857. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Ana M Fortuna

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Primary Examiner
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AMF

Application Number

Application No.

09/975,407

Examiner

Ana M Fortuna

Applicant(s)

USINOWICZ, PAUL J.

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